10-3-01

CofC

**CASE RG/G-32603A** 

OCT 0 2 2006

**FILING BY "EXPRESS MAIL" UNDER 37 CFR 1.10** 

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10/2/06 Date of Deposit

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE PATENT 6,962,924 OF

RAY ET AL.

ISSUED: NOVEMBER 8, 2005 APPLICATION NO: 10/621,670

FILED: JULY 17, 2003

FOR: NOVEL SALT AND POLYMORPHS OF DESLORATADINE

**HEMIFUMARATE** 

**Attn.: Certificate of Correction Office** 

Commissioner for Patents PO Box 1450 Alexandria, VA 22313-1450

REQUEST FOR CERTIFICATE OF CORRECTION

Sir:

Pursuant to 37 CFR 1.322, it is hereby respectfully requested that a Certificate of Correction be issued for United States Patent **6,962,924** containing the corrections set forth on the appended Form PTO 1050.

Upon review of the patent mentioned above, applicants noted that some of the wrong claims were inserted in the patent. Claims 1-6 were canceled and new claims 7-21 were added in the Amendment which accompanied the RCE, dated May 21, 2004 (a copy is enclosed herewith). A further Amendment was filed on December 6, 2004 canceling claims 7, 10 and 13 (a copy is enclosed herewith). A still further Amendment was filed on March 28, 2005 canceling claims 14-15 (a copy is enclosed herewith). Claims 18 and 21 were cancelled in an Examiner's Amendment as noted in the Notice of Allowability which accompanied the Notice of Allowance, dated May 20, 2005 (a copy is enclosed herewith), leaving claims 8, 9, 11, 12, 16, 17, 19 & 20 as the allowed claims. These allowed claims should be replaced by the claims listed in the patent and have been renumbered claims 1-8 on the enclosed Certificate of

Correction Forms PTO 1050. The above-mentioned Amendments and Examiner's Amendment all show the support needed to correct the patent.

Upon further review of the patent, Patentees noted that the first paragraph of the patent under the title needs to be corrected. The word "benefit" was misspelled, a <a href="mailto:comma is missing">comma is missing</a> after the provisional application number and the word "file on" should be inserted before the filing date.

Also errors which appeared on patent are believed to be attributable to patentees and are evident from the table below:

Location and/or Error in Printed Patent	Location of Support of these errors
Column 6, line 3 of claim 8, delete "by"	Error made on line 2 of claim 8 on page 2 of Amendment, filed on May 21, 2004 (now renumbered as claim 1).
Column 6, line 3 of claim 9, delete "by"	Error made on line 2 of claim 9 on page 2 of Amendment, filed on May 21, 2004 (now renumbered as claim 2).
Column 7, line 3 of claim 11, replacement of "Claim 9" with "Claim 8"	Claim 11 line 2 on page 4 of Amendment, filed on May 21, 2004 (now renumbered as claim 3).
Column 7, line 3 of claim 16, insertion of "according to claim 8" before "comprising:"	Insertion was made in claim 16, line 2, page 5 of Amendment, filed on December 6, 2004 (now renumbered as claim 5).
Column 7, line 3 of claim 17, insertion of "according to claim 8" before "comprising:"	Insertion was made in claim 17, line 2, page 5 of Amendment, filed on December 6, 2004 (now renumbered as claim 6).
Column 7, lines 4 of claim 17, insertion of the word "anhydrons" before "ethanol"	Insertion of the word that was added in the Examiner's Amendment which accompanied the Notice of Allowability, dated May 20, 2005 (claim 17 now renumbered claim 6).
Column 7, line 5 of claim 17, replacement of "desloratidine" with "desloratadine	Misspelling of word in claim 17 on page 5 of Amendment, filed on May 21, 2004 (now renumbered as claim 6).
Column 8, line 1, insertion of the word "anhydrons" before "ethanol"	Insertion of the word that was added in the Examiner's Amendment which accompanied the Notice of Allowability, dated May 20, 2005.

Column 8, line 2, continuation of claim 17, replacement of "desloratidine" with "desloratedine"

Column 8, line 4, continuation of claim 17, insertion of "and stirring for 30-45 minutes at this temperature:" before "to form a solid;"

Column 8, line 5, continuation of claim 17, insertion of phrase "at this temperature" after the word "solid"

Column 8, line 3 of claim 19, insertion of "according to claim 2" before "comprising:"

Column 8, line 4 of claim 19, replace "mixing desloratadine, furmaric acid, and ethanol" with "mixing an ethanolic solution of desloratadine and furmaric acid"

Column 8, lines 5 and 6 of claim 19, insertion of "stirring for 30-45 minutes after mixing" before "to form a solid:"

Column 8, line 7 of claim 19, removal of the opened quote before "filtering"

Coumn 8, line 7 of claim 19, insertion of the phrase "at this temperature" after the word "solid"

Column 8, line 3 of claim 20, insertion of "accordingly to Claim 2" before comprising:" Misspelling of word in claim 17 on page 5 of Amendment, filed on May 21, 2004 (now renumbered as claim 6).

Page 2 of Examiner's Amendment which accompanied the Notice of Allowability, date May 20, 2005 (claim 17 now renumbered as claim 6).

Page 2 of Examiner's Amendment which accompanied the Notice of Allowability, date May 20, 2005 (claim 17 now renumbered as claim 6).

Insertion was made in claim 19, line 2 on page 5 of the Amendment dated, December 6, 2004 (now renumbered as claim 7).

Page 2 of Examiner's Amendment which accompanied the Notice of Allowability, dated May 20, 2005 (claim 19 now renumbered claim 7).

Page 2 of Examiner's Amendment which accompanied the Notice of Allowability, dated May 20, 2005 (claim 19 now renumbered claim 7).

Correcting clerical error (claim 19 now renumbered claim 7).

Page 2 of Examiner's Amendment which accompanied the Notice of Allowability, dated May 20, 2005 (claim 19 now renumbered claim 7).

Insertion was made in claim 20, line 2, page 5 of Amendment, filed on December 6, 2004 (now renumbered as claim 8).

Misspelling of word in claim 20 on line 3 of

Column 8, line 5 of claim 20, replacement of "desloratidine" with "desloratadine"

Column 8, line 4, claim 20, removal of apostrophe before "dissolving"

Column 8, line 4, claim 20, insertion of "anhydrous" before "ethanol"

Column 8, line 5 of claim 20, replacement of "desloratidine" with "desloratadine"

Column 8, line 6, claim 20, removal of apostrophe before "dissolving"

Column 8, line 6,claim 20, insertion of "anhydrous" before "ethanol"

Column 8, line 8 of claim 20, replacement of "desloratidine" with "desloratadine"

Column 8, line 8, of claim 20, removal of apostrophe before "mixing"

Column 8, line 10 of claim 20, insertion of "and stirring for 30-45 minutes after mixing before "to form a solid"

Column 8, line 11 of claim 20, removal of the apostrophe before "filtering"

Column 8, line 11 of claim 20, insertion of "at this temperature" after "solid"

Amendment, filed May 21, 2004 (now renumbered as claim 8).

Correcting clerical error (claim 20 now renumbered as claim 8).

Page 3 of Examiner's Amendment which accompanied the Notice of Allowability, dated May 20, 2005 (claim 20 now renumbered as claim 8).

Misspelling of word in claim 20 on page 6 of Amendment, filed on May 21, 2004 (claim 20 now renumbered as claim 8).

Correcting clerical error (claim 20 now renumbered as claim 8).

Page 3 of Examiner's Amendment which accompanied the Notice of Allowability, dated May 20, 2005 (claim 20 now renumbered as claim 8)

Misspelling of word in claim 20 on line 5 of Amendment, filed May 21, 2004 (now renumbered as claim 8).

Correcting clerical error (claim 20 now renumbered as claim 8)..

Insertion of words that were added in the Examiner's Amendment which accompanied the Notice of Allowability, dated May 20, 2005 (claim 20 now renumbered claim 8).

Correcting clerical error (claim 20 now renumbered as claim 8).

Insertion of words that were added in the Examiner's Amendment which accompanied the Notice of Allowability, dated May 20, 2005 (claim 20 now renumbered claim 8).

Attached is a duplicate of Form TO 1050, with at least one copy being suitable for printing.

Since some of the above errors are ascribable to the patentees, a fee is believed to be necessitated by this Request for Certification of Correction. The Commissioner is hereby authorized to charge any fee necessary to Deposit Account No. 19-0134 in the name of Novartis.

Please send the Certificate of Correction to the address currently associated with Customer No. 001095.

**Novartis** 

Corporate Intellectual Property One Health Plaza, Building 104 East Hanover, NJ 07936-1080

(862)778-7951

Encls.: copy of Amendment, dated May 21, 2004

copy of Amendment, dated December 6, 2004 copy of Amendment, dated March 28, 2005

copy of Notice of Allowability, dated May 20, 2005

PTO for 1050 (2)

post card

10/2/06

Date:

Respectfully submitted,

Peter J. Waibel Attorney for Applicants

Reg. No. 43,228

# UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

PATENT NO

6,962,924

DATED:

November 8, 2005

INVENTOR(S)

RAY ET AL.

It is certified that there is/are an error(s) in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

#### Column 1, lines 4 and 5 should read:

-- This application claims the benefit of provisional application Ser. No. 60.401,153, filed on Aug. 5, 2002. --.

The allowed claims (8, 9, 11, 12, 16, 17, 19 and 20) have been renumbered as follows:

1. A Polymorph form 1 of 8-chloro-6,11-dihydro-11-(4-piperidylidene)-5H-benzo[5,6]-cyclohepta[1,2-b]pyridine hemifumarate having the following x-ray powder diffraction pattern expressed in terms of "d" spacing and relative intensity ("I/I<sub>0</sub>"):

D	I/I <sub>0</sub>
12.32	26
10.53	11
8.444	19
8.149	16
6.550	25
6.281	22
6.185	35
6.084	19
5.553	88
5.373	64
5.096	59
4.960	41
4.745	34
4.470	26

MAILING ADDRESS OF SENDER:

PATENT NO. 6,962,924

Peter J. Waibel Novartis Corporate Intellectual Property One Health Plaza, Building 104 East Hanover, NJ 07936-1080 (862) 778-7945

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10.53	11
8.444	19
8.149	16
6.550	25
6.281	22
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5.373	64
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4.960	41
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PATENT NO

: 6,962,924

DATED:

: November 8, 2005

INVENTOR(S) : RAY ET AL.

4.403	30
4.365	46
4.159	84
4.124	73
4.061	35
3.750	79
3.716	100
3.659	27
3.589	14
3.398	11
3.362	16
3.277	10
3.090	23
3.051	11
3.003	15
2.784	10
2.507	12

MAILING ADDRESS OF SENDER:

PATENT NO. 6,962,924

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## UNITED STATES PATENT AND TRADEMARK OFFICE **CERTIFICATE OF CORRECTION**

PATENT NO : 6,962,924

DATED:

: November 8, 2005

INVENTOR(S) : RAY ET AL.

A Polymorph form 2 of 8-chloro-6,11-dihydro-11-(4-piperidylidene)-5H-benzo[5,6]cyclohepta[1,2-b]pyridine hemifumarate having the following x-ray powder diffraction pattern expressed in terms of "d" spacing and relative intensity ("I/I<sub>0</sub>"):

D	/l <sub>o</sub>
14.14	14
10.74	13
7.158	39
7.084	20
5.983	12
5.663	61
5.365	33
5.267	100
5.064	12
4.973	46
4.809	16
4.745	43
4.477	32
4.449	26
4.399	60
4.317	54
4.012	49

MAILING ADDRESS OF SENDER:

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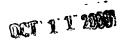
INVENTOR(S) : RAY ET AL.

3.772	26
3.745	61
3.722	97
3.590	88
3.561	59
3.385	24
2.986	17
2.949	11
2.836	20
2.778	10
2.616	10
2.481	12

MAILING ADDRESS OF SENDER:

PATENT NO. 6,962,924

Peter J. Waibel **Novartis** Corporate Intellectual Property One Health Plaza, Building 104 East Hanover, NJ 07936-1080 (862) 778-7945



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PATENT NO

: 6,962,924

DATED:

: November 8, 2005

INVENTOR(S) : RAY ET AL.

- A solid pharmaceutical composition comprising an anti-allergic effective amount of the polymorph form 1 according to Claim 1 and a pharmaceutically acceptable carrier.
- A solid pharmaceutical composition comprising an anti-allergic effective amount of the polymorph form 2 according to Claim 2 and a pharmaceutically acceptable carrier.
- A process for preparing polymorph form 1 of 8-chloro-6,11-dihydro-11-(4-piperidylidene)-5Hbenzo[5,6]-cyclohepta[1,2-b]pyridine hemifumarate according to Claim 1 comprising:
- (i) mixing an ethanolic solution of desloratadine and fumaric acid at a temperature of from about 15°C to about 25°C and stirring for 30-45 minutes at this temperature to form a solid; and
- (ii) filtering the solid at this temperature to form the polymorphic form 1 of 8-chloro-6,11-dihydro-11-(4-piperidylidene)-5H-benzo[5,6]-cyclohepta[1,2-b]pyridine hemifumarate which is characterized by a DSC of 224°C ± 2°C.

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- (a) dissolving desloratedine in anhydrous ethanol to form an ethanolic solution of desloratedine;
- (b) dissolving fumaric acid in anhydrous ethanol to form an ethanolic solution of fumaric acid;
- (c) mixing the ethanolic solution of desloratadine and the ethanolic solution of fumaric acid at a temperature of from about 15°C to about 25°C and stirring for 30-45 minutes at this temperature to form a solid; and
- (d) filtering the solid at this temperature to form the polymorphic form 1 of 8-chloro-6,11-dihydro-11-(4-piperidylidene)-5H-benzo[5,6]-cyclohepta[1,2-b]pyridine hemifumarate which is characterized by a DSC of 224°C ± 2°C.

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PATENT NO : 6,962,924

DATED:

: November 8, 2005

INVENTOR(S) : RAY ET AL.

- A process for preparing polymorph form 2 of 8-chloro-6,11-dihydro-11-(4-piperidylidene)-5Hbenzo[5,6]-cyclohepta[1,2-b]pyridine hemifumarate according to Claim 2 comprising:
- (i) mixing an ethanolic solution of desloratadine and fumaric acid at a temperature of from about 55°C to about 70°C and stirring for 30-45 minutes after mixing to form a solid; and
- (ii) filtering the solid at this temperature to form the polymorphic form 2 of 8-chloro-6,11-dihydro-11-(4-piperidylidene)-5H-benzo[5,6]-cyclohepta[1,2-b]pyridine hemifumarate which is characterized by a DSC of 232°C ± 2°C.

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- (b) dissolving fumaric acid in anhydrous ethanol to form an ethanolic solution of fumaric acid;
- (c) mixing the ethanolic solution of desloratadine and the ethanolic solution of fumaric acid at a temperature of from about 55°C to about 70°C and stirring for 30-45 minutes after mixing to form a solid: and
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PATENT NO. 6,962,924

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The allowed claims (8, 9, 11, 12, 16, 17, 19 and 20) have been renumbered as follows:

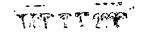
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INVENTOR(S) : RAY ET AL.

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- A solid pharmaceutical composition comprising an anti-allergic effective amount of the polymorph form 1 according to Claim 1 and a pharmaceutically acceptable carrier.
- A solid pharmaceutical composition comprising an anti-allergic effective amount of the polymorph form 2 according to Claim 2 and a pharmaceutically acceptable carrier.
- A process for preparing polymorph form 1 of 8-chloro-6,11-dihydro-11-(4-piperidylidene)-5Hbenzo[5,6]-cyclohepta[1,2-b]pyridine hemifumarate according to Claim 1 comprising:
- (i) mixing an ethanolic solution of desloratadine and fumaric acid at a temperature of from about 15°C to about 25°C and stirring for 30-45 minutes at this temperature to form a solid; and
- (ii) filtering the solid at this temperature to form the polymorphic form 1 of 8-chloro-6,11-dihydro-11-(4-piperidylidene)-5H-benzo[5,6]-cyclohepta[1,2-b]pyridine hemifumarate which is characterized by a DSC of 224°C ± 2°C.

MAILING ADDRESS OF SENDER:

PATENT NO. 6,962,924

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- (b) dissolving fumaric acid in anhydrous ethanol to form an ethanolic solution of fumaric acid;
- (c) mixing the ethanolic solution of desloratadine and the ethanolic solution of fumaric acid at a temperature of from about 15°C to about 25°C and stirring for 30-45 minutes at this temperature to form a solid; and
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MAILING ADDRESS OF SENDER: Peter J. Waibel **Novartis** Corporate Intellectual Property One Health Plaza, Building 104 East Hanover, NJ 07936-1080 (862) 778-7945

**FORM PTO-1050** 

PATENT NO. 6,962,924

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DATED:

November 8, 2005

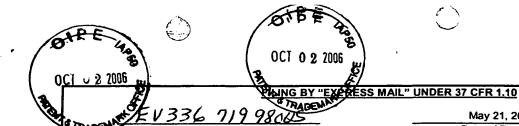
INVENTOR(S) : RAY ET AL.

- A process for preparing polymorph form 2 of 8-chloro-6,11-dihydro-11-(4-piperidylidene)-5Hbenzo[5,6]-cyclohepta[1,2-b]pyridine hemifumarate according to Claim 2 comprising:
- (a) dissolving desloratadine in anhydrous ethanol to form an ethanolic solution of desloratadine;
- (b) dissolving fumaric acid in anhydrous ethanol to form an ethanolic solution of fumaric acid;
- (c) mixing the ethanolic solution of desloratadine and the ethanolic solution of fumaric acid at a temperature of from about 55°C to about 70°C and stirring for 30-45 minutes after mixing to form a solid: and
- (d) filtering the solid at this temperature to form the polymorphic form 2 of 8-chloro-6,11-dihydro-11-(4-piperidylidene)-5H-benzo[5,6]-cyclohepta[1,2-b]pyridine hemifumarate which is characterized by a DSC of 232°C ± 2°C.

MAILING ADDRESS OF SENDER:

PATENT NO. 6,962,924

Peter J. Waibel **Novartis** Corporate Intellectual Property One Health Plaza, Building 104 East Hanover, NJ 07936-1080 (862) 778-7945



#### IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF

Art Unit: 1625

RAY ET AL.

Examiner: Evelyn Huang

May 21, 2004 Date of Deposit

**APPLICATION NO: 10/621,670** 

FILED: JULY 17, 2003

FOR: NOVEL SALT AND POLYMORPHS OF DESLORATADINE

**HEMIFUMARATE** 

MS: Amendment Commissioner for Patents PO Box 1450 Alexandria, VA 22313-1450

#### AMENDMENT -

Sir:

Prior to calculating the filing fee, kindly enter the following amendment.

Amendments to the claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks begin on page 7 of this paper.



## Amendments to the claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

#### **Listing of claims**:

Claims 1-6 (canceled).

- 7. (new) A 8-chloro-6,11-dihydro-11-(4-piperidylidene)-5H-benzo[5,6]-cyclohepta[1,2-b]pyridine hemifumarate.
- 8. (new) A polymorph form 1 of 8-chloro-6,11-dihydro-11-(4-piperidylidene)-5H-benzo[5,6]-cyclohepta[1,2-b]pyridine hemifumarate having by the following x-ray powder diffraction pattern expressed in terms of "d" spacing and relative intensity ("I/I<sub>o</sub>"):

d	1/10
12.32	26
10.53	. 11
8.444	19
8.149	16
6.550	25
6.28 1	22
6.185	35
6.084	19
5.553	88
5.373	64
5.096	59
4.960	41
4.745	, 34
4.470	26
4.403	30
4.365	<b>'</b> 46
4.159	84
4.124	73
4.061	<b>35</b>
3.750	. 79
3.716	, 100
3.659	27
3.589	14
3.398	11
3.362	16
3.277	10
3.090	23
3.051	11
3.003	15
2.784	10
2.507	12

9. (new) A polymorph form 2 of 8-chloro-6,11-dihydro-11-(4-piperidylidene)-5H-benzo[5,6]-cyclohepta[1,2-b]pyridine hemifumarate having by the following x-ray powder diffraction pattern expressed in terms of "d" spacing and relative intensity ("I/I $_0$ "):

D	I/I <sub>o</sub>
14.14	14
10.74	13
7.158	39
7.084	20
5.983	12
5.663	61
5.365	33
5.267	100
5.064	12
4.973	46
4.809	16
4.745	43
4.477	32
4.449	26
. 4.399	60
4.317	54
4.012	49
3.772	26
3.745	61
3.722	97
3.590	88
3.561	59
3.385	24
2.986	17
2.949	11
2.836	20
2.778	10
2.616	10
2.481	12

<sup>10. (</sup>new) A solid pharmaceutical composition comprising an anti-allergic effective amount of the compound of Claim 1 and a pharmaceutically acceptable carrier.

<sup>11. (</sup>new) A solid pharmaceutical composition comprising an anti-allergic effective amount of the polymorph form 1 according to Claim 8 and a pharmaceutically acceptable carrier.

<sup>12. (</sup>new) A solid pharmaceutical composition comprising an anti-allergic effective amount of the polymorph form 2 according to Claim 9 and a pharmaceutically acceptable carrier.

- 13. (new) A method of treating allergic reactions in a mammal which comprises administering to said mammal an anti-allergic effective amount of the compound of Claim 1.
- 14. (new) A method of treating allergic reactions in a mammal which comprises administering to said mammal an anti-allergic effective amount of the polymorph form 1 according to Claim 8.
- 15. (new) A method of treating allergic reactions in a mammal which comprises administering to said mammal an anti-allergic effective amount of the polymorph form 2 according to Claim 9.
- 16. (new) A process for preparing polymorph form 1 of 8-chloro-6,11-dihydro-11-(4-piperidylidene)-5H-benzo[5,6]-cyclohepta[1,2-b]pyridine hemifumarate comprising:
- (i) mixing desloratadine, fumaric acid, and ethanol at a temperature of from about 15°C to about 25°C to form a solid; and
- (ii) filtering the solid to form the polymorphic form 1 of 8-chloro-6,11-dihydro-11-(4-piperidylidene)-5H-benz $\dot{o}$ [5,6]-cyclohepta[1,2-b]pyridine hemifumarate which is characterized by a DSC of 224°C  $\pm$  2°C.
- 17. (new) A process for preparing polymorph form 1 of 8-chloro-6,11-dihydro-11-(4-piperidylidene)-5H-benzo[5,6]-cyclohepta[1,2-b]pyridine hemifumarate comprising:
- (a) dissolving desloratadine in ethanol to form an ethanolic solution of desloratidine;
- (b) dissolving fumaric acid in ethanol to form an ethanolic solution of fumaric acid;
- (c) mixing the ethanolic solution of desloratidine and the ethanolic solution of fumaric acid at a temperature of from about 15°C to about 25°C to form a solid; and
- (d) filtering the solid to form the polymorphic form 1 of 8-chloro-6,11-dihydro-11-(4-piperidylidene)-5H-benzo[5,6]-cyclohepta[1,2-b]pyridine hemifumarate which is characterized by a DSC of  $224^{\circ}$ C  $\pm$  2°C.
- 18. (new) The process according to Claim 17 wherein the mixing in Step (c) is conducted for a period of time from about 30 to about 45 minutes.
- 19. (new) A process for preparing polymorph form 2 of 8-chloro-6,11-dihydro-11-(4-piperidylidene)-5H-benzo[5,6]-cyclohepta[1,2-b]pyridine hemifumarate comprising:
- (i)' mixing desloratadine, fumaric acid, and ethanol at a temperature of from about 55°C to about 70°C to form a solid; and

- (ii)" filtering the solid to form the polymorphic form 2 of 8-chloro-6,11-dihydro-11-(4-piperidylidene)-5H-benzo[5,6]-cyclohepta[1,2-b]pyridine hemifumarate which is characterized by a DSC of 232°C ± 2°C.
- 20. (new) A process for preparing polymorph form 2 of 8-chloro-6,11-dihydro-11-(4-piperidylidene)-5H-benzo[5,6]-cyclohepta[1,2-b]pyridine hemifumarate comprising:
- (a)' dissolving desloratadine in ethanol to form an ethanolic solution of desloratidine;
- (b)' dissolving fumaric acid in ethanol to form an ethanolic solution of fumaric acid;
- (c)' mixing the ethanolic solution of desloratidine and the ethanolic solution of fumaric acid at a temperature of from about 55°C to about 70°C to form a solid; and
- (d)' filtering the solid to form the polymorphic form 2 of 8-chloro-6,11-dihydro-11-(4-' piperidylidene)-5H-benzo[5,6]-cyclohepta[1,2-b]pyridine hemifumarate which is characterized by a DSC of 232°C  $\pm$  2°C.
- 21. (new) The process according to Claim 20 wherein the mixing in Step (c)' is conducted for a period of time from about 30 to about 45 minutes.

#### Remarks

By the present amendment, applicants have canceled Claims 1-6, and added new Claims 7-21 in order to more clearly identify the invention. Support for new Claim 7 is found in the specification on page 1, lines 35. Support for new Claims 8 and 9 is found in canceled Claim 1. Support for new Claims 10-12 is found in canceled Claims 2-3. Support for new Claims 13-15 is found in canceled Claim 5. Support for new Claims 16-18 is found in canceled Claim 6, and in the specification on page 7, lines 17-27. Support for new Claims 19-21 is found in canceled Claim 6, and in the specification on page 7, lines 28-31, and in the specification on page 8, lines 1-6.

Applicants respectfully request the Examiner to enter the Amendment.

Respectfully submitted,

Aftorney for Applicants

Reg. No. 34,940

Novartis Corporate Intellectual Property One Health Plaza, Building 430 East Hanover, NJ 07936-1080 (862) 778-7945

Date: May 21, 2004

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EV45786796403 Express Mail Label Number

December 6, 2004

Date of Deposit

#### IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF

Art Unit: 1625

RAY ET AL.

Examiner: Evelyn Huang

**APPLICATION NO: 10/621,670** 

FILED: JULY 17, 2003

FOR: NOVEL SALT AND POLYMORPHS OF DESLORATADINE

**HEMIFUMARATE** 

**MS: Amendment** 

Commissioner for Patents

PO Box 1450

Alexandria, VA 22313-1450

#### **AMENDMENT**

Sir:

The following amendment is in response to an Office Action dated July 6, 2004. A two month extension of time petition is included herewith.

Amendments to the claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks/Arguments begin on page 7 of this paper.

#### **Amendments to the claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application.

#### Listing of claims:

Claims 1-7 (cancelled).

8. (previously presented): A polymorph form 1 of 8-chloro-6,11-dihydro-11-(4-piperidylidene)-5H-benzo[5,6]-cyclohepta[1,2-b]pyridine hemifumarate having by the following x-ray powder diffraction pattern expressed in terms of "d" spacing and relative intensity ("I/I<sub>o</sub>"):

d	1/10
12.32	26
10.53	11
8.444	19
8.149	16
6.550	25
6.281	22
6.185	35
6.084	19
5.553	88
5.373	64
5.096	59
4.960	41
4.745	34
4.470	26
4.403	30
4.365	46
4.159	84
4.124	73
4.061	35
3.750	79
3.716	100
3.659	27
3.589	14
3.398	11
3.362	16
3.277	10
3.090	23
3.051	11
3.003	15
2.784	10
2.507	12

9. (previously presented): A polymorph form 2 of 8-chloro-6,11-dihydro-11-(4-piperidylidene)-5H-benzo[5,6]-cyclohepta[1,2-b]pyridine hemifumarate having by the following x-ray powder diffraction pattern expressed in terms of "d" spacing and relative intensity ("I/I<sub>o</sub>"):

D	1/l <sub>0</sub>
14.14	14
10.74	13
7.158	39
7.084	20
5.983	12
5.663	61
5.365	33
5.267	100
5.064	12
4.973	. 46
4.809	16
4.745	43
4.477	32
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3.722	97
3.590	88
3.561	59
3.385	24
2.986	17
2.949	11
2.836	20
2.778	10
2.616	10
2.481	12

<sup>10. (</sup>cancelled).

<sup>11. (</sup>previously presented): A solid pharmaceutical composition comprising an anti-allergic effective amount of the polymorph form 1 according to Claim 8 and a pharmaceutically acceptable carrier.

<sup>12. (</sup>previously presented): A solid pharmaceutical composition comprising an anti-allergic effective amount of the polymorph form 2 according to Claim 9 and a pharmaceutically acceptable carrier.

- 13. (cancelled).
- 14. (previously presented): A method of treating allergic reactions in a mammal which comprises administering to said mammal an anti-allergic effective amount of the polymorph form 1 according to Claim 8.
- 15. (previously presented): A method of treating allergic reactions in a mammal which comprises administering to said mammal an anti-allergic effective amount of the polymorph form 2 according to Claim 9.
- 16. (currently amended): A process for preparing polymorph form 1 of 8-chloro-6,11-dihydro-11-(4-piperidylidene)-5H-benzo[5,6]-cyclohepta[1,2-b]pyridine hemifumarate <u>according to Claim 8</u> comprising:
- (i) mixing desloratedine, fumaric acid, and ethanol at a temperature of from about 15°C to about 25°C to form a solid; and
- (ii) filtering the solid to form the polymorphic form 1 of 8-chloro-6,11-dihydro-11-(4-piperidylidene)-5H-benzo[5,6]-cyclohepta[1,2-b]pyridine hemifumarate which is characterized by a DSC of 224°C ± 2°C.
- 17. (currently amended): A process for preparing polymorph form 1 of 8-chloro-6,11-dihydro-11-(4-piperidylidene)-5H-benzo[5,6]-cyclohepta[1,2-b]pyridine hemifumarate <u>according to Claim 8</u> comprising:
- (a) dissolving desloratedine in ethanol to form an ethanolic solution of desloratidine;
- (b) dissolving fumaric acid in ethanol to form an ethanolic solution of fumaric acid;
- (c) mixing the ethanolic solution of desloratidine and the ethanolic solution of fumaric acid at a temperature of from about 15°C to about 25°C to form a solid; and
- (d) filtering the solid to form the polymorphic form 1 of 8-chloro-6,11-dihydro-11-(4-piperidylidene)-5H-benzo[5,6]-cyclohepta[1,2-b]pyridine hemifumarate which is characterized by a DSC of 224°C ± 2°C.
- 18. (previously presented): The process according to Claim 17 wherein the mixing in Step (c) is conducted for a period of time from about 30 to about 45 minutes.
- 19. (currently amended): A process for preparing polymorph form 2 of 8-chloro-6,11-dihydro-11-(4-piperidylidene)-5H-benzo[5,6]-cyclohepta[1,2-b]pyridine hemifumarate <u>according to Claim 9</u> comprising:

- (i)' mixing desloratedine, fumaric acid, and ethanol at a temperature of from about 55°C to about 70°C to form a solid; and
- (ii)" filtering the solid to form the polymorphic form 2 of 8-chloro-6,11-dihydro-11-(4-piperidylidene)-5H-benzo[5,6]-cyclohepta[1,2-b]pyridine hemifumarate which is characterized by a DSC of 232°C  $\pm$  2°C.
- 20. (currently amended): A process for preparing polymorph form 2 of 8-chloro-6,11-dihydro-11-(4-piperidylidene)-5H-benzo[5,6]-cyclohepta[1,2-b]pyridine hemifumarate <u>according to Claim 9</u> comprising:
- (a)' dissolving desloratadine in ethanol to form an ethanolic solution of desloratidine;
- (b)' dissolving fumaric acid in ethanol to form an ethanolic solution of fumaric acid;
- (c)' mixing the ethanolic solution of desloratidine and the ethanolic solution of fumaric acid at a temperature of from about 55°C to about 70°C to form a solid; and
- (d)' filtering the solid to form the polymorphic form 2 of 8-chloro-6,11-dihydro-11-(4-piperidylidene)-5H-benzo[5,6]-cyclohepta[1,2-b]pyridine hemifumarate which is characterized by a DSC of 232°C ± 2°C.
- 21. (previously presented): The process according to Claim 20 wherein the mixing in Step (c)' is conducted for a period of time from about 30 to about 45 minutes.

#### Remarks/Arguments

The Examiner has rejected Claims 7, 10, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Villani (4,659,716) in view of Hansen (5,658,899) and/or Strupczewski (4,954,503) and/or Congy (5,290,951).

In response, applicants have cancelled Claims 7, 10, and 13.

The Examiner stated that Claims 8, 9, 11, 12, 14, 15 are allowed for reasons of record, and process Claims 16-21, if amended to depend on the allowable claims 8, 9 would also be allowable.

In response, applicants have amended Claims 16 and 17 to depend on Claim 8, and Claims 19 and 20 to depend on Claim 9.

Applicants have submitted herewith a supplemental information disclosure statement listing a reference which was cited in the International Search Report dated November 28, 2003. The reference is WO 02/42290, a copy of which is included herewith.

WO 02/42290 states on page 2, lines 1-5, of the PCT published application that Hungarian Patent No. 194 864 (U.S. 4,659,716, Villani) states that salts can be formed from desloratedine with pharmaceutically acceptable acids: hydrochloric acid, methanesulfonic acid, sulfuric acid, acetic acid, maleic acid, fumaric acid, and phosphoric acid. WO 02/42290 describes the following desloratidine salts: desloratidine disulfate, desloratidine dihydrogen chloride, desloratidine dihydrogen bromide, and desloratidine hemisulfate. It is noted that in Example 5 of WO 02/42290, a salt of deloratedine is prepared using maleic or fumaric acid, depending on ones' interpretation of the structure provided. As stated in the table on page 8, this desloratedine salt has a melting point of 169-171°C.

In contrast, applicants' polymorphic Forms 1 and 2 of desloratadine hemifumarate have a melting point, as determined by differential scanning colorimetry (DSC) of  $224^{\circ}\text{C} \pm 2^{\circ}\text{C}$  and  $232^{\circ}\text{C} \pm 2^{\circ}\text{C}$ , respectively, as claimed in applicants' Claims 16 and 19. Thus, the melting points of applicants' polymorphic Forms 1 and 2 of desloratadine hemifumarate are significantly different than the melting point of the desloratadine salt prepared according to WO 02/42290.

In addition, neither Villani, as noted by the Examiner, nor WO 02/42290 specifically describe polymorphic desloratadine hemifumarate, as claimed by applicants. Applicants' Claims 8 and 9 describe polymorphic Forms 1 and 2 of desloratadine hemifumarate by their respective powder X-ray diffraction patterns. Thus, WO 02/42290 does not teach or suggest applicants' polymorphic desloratadine hemifumarate, as claimed.



It is requested that the Examiner enter the above amendments, and pass the case to issue.

Respectfully submitted,

John D. Thallemer

Reg. No. 34,940

Attorney for Applicants

Novartis Corporate Intellectual Property One Health Plaza, Building 430 East Hanover, NJ 07936-1080 (862) 778-7945

Date: December 6, 2004

ACE OF IT THIS



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March 28, 2005 Date of Deposit

# IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF

Art Unit: 1625

RAY ET AL.

Examiner: Evelyn Huang

**APPLICATION NO: 10/621,670** 

FILED: JULY 17, 2003

FOR: NOVEL SALT AND POLYMORPHS OF DESLORATADINE

**HEMIFUMARATE** 

MS: Amendment Commissioner for Patents PO Box 1450 Alexandria, VA 22313-1450

#### **AMENDMENT**

Sir:

The following amendment is in response to an Office Action dated March 7, 2005.

Amendments to the claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks/Arguments begin on page 7 of this paper.

# Amendments to the claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

# **Listing of claims**:

Claims 1-7 (canceled).

8. (previously presented): A polymorph form 1 of 8-chloro-6,11-dihydro-11-(4-piperidylidene)-5H-benzo[5,6]-cyclohepta[1,2-b]pyridine hemifumarate having by the following x-ray powder diffraction pattern expressed in terms of "d" spacing and relative intensity ("I/I<sub>o</sub>"):

D	1/10			
12.32	26			
10.53	11			
8.444	19			
8.149	16			
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6.084	19			
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5.373	64			
5.096	59			
4.960	41			
4.745	34			
4.470	26			
4.403	30			
4.365	46			
4.159	84			
4.124	73			
4.061	35			
3.750	79			
3.716	100			
3.659	27			
3.589	14			
3.398	11			
3.362	16			
3.277	10			
3.090	23			
3.051	11			
3.003	15			
2.784	10			
2.507	12			

<sup>9. (</sup>previously presented): A polymorph form 2 of 8-chloro-6,11-dihydro-11-(4-piperidylidene)-5H-benzo[5,6]-cyclohepta[1,2-b]pyridine hemifumarate having by the following x-ray powder diffraction pattern expressed in terms of "d" spacing and relative intensity (" $I/I_o$ "):

D	I/I <sub>o</sub>			
14.14	14			
10.74	13			
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5.663	61			
5.365	33			
5.267	100			
5.064	12			
4.973	46			
4.809	16			
4.745	43			
4.477	32			
4.449	26			
4.399	60			
4.317	54			
4.012	49			
3.772	26			
3.745	61			
3.722	97			
3.590	88			
3.561	59			
3.385	24			
2.986	17			
2.949	11			
2.836	20			
2.778	10			
2.616	10			
2.481	12			

<sup>10. (</sup>canceled).

<sup>11. (</sup>previously presented): A solid pharmaceutical composition comprising an anti-allergic effective amount of the polymorph form 1 according to Claim 8 and a pharmaceutically acceptable carrier.

<sup>12. (</sup>previously presented): A solid pharmaceutical composition comprising an anti-allergic effective amount of the polymorph form 2 according to Claim 9 and a pharmaceutically acceptable carrier.

<sup>13-15. (</sup>canceled).

- 16. (previously presented): A process for preparing polymorph form 1 of 8-chloro-6,11-dihydro-11-(4-piperidylidene)-5H-benzo[5,6]-cyclohepta[1,2-b]pyridine hemifumarate according to Claim 8 comprising:
- (i) mixing desloratedine, fumaric acid, and ethanol at a temperature of from about 15°C to about 25°C to form a solid; and
- (ii) filtering the solid to form the polymorphic form 1 of 8-chloro-6,11-dihydro-11-(4-piperidylidene)-5H-benzo[5,6]-cyclohepta[1,2-b]pyridine hemifumarate which is characterized by a DSC of  $224^{\circ}\text{C} \pm 2^{\circ}\text{C}$ .
- 17. (previously presented): A process for preparing polymorph form 1 of 8-chloro-6,11-dihydro-11-(4-piperidylidene)-5H-benzo[5,6]-cyclohepta[1,2-b]pyridine hemifumarate according to Claim 8 comprising:
- (a) dissolving desloratadine in ethanol to form an ethanolic solution of desloratidine;
- (b) dissolving fumaric acid in ethanol to form an ethanolic solution of fumaric acid;
- (c) mixing the ethanolic solution of desloratidine and the ethanolic solution of fumaric acid at a temperature of from about 15°C to about 25°C to form a solid; and
- (d) filtering the solid to form the polymorphic form 1 of 8-chloro-6,11-dihydro-11-(4-piperidylidene)-5H-benzo[5,6]-cyclohepta[1,2-b]pyridine hemifumarate which is characterized by a DSC of  $224^{\circ}\text{C} \pm 2^{\circ}\text{C}$ .
- 18. (previously presented): The process according to Claim 17 wherein the mixing in Step (c) is conducted for a period of time from about 30 to about 45 minutes.
- 19. (previously presented): A process for preparing polymorph form 2 of 8-chloro-6,11-dihydro-11-(4-piperidylidene)-5H-benzo[5,6]-cyclohepta[1,2-b]pyridine hemifumarate according to Claim 9 comprising:
- (i)' mixing desloratadine, fumaric acid, and ethanol at a temperature of from about 55°C to about 70°C to form a solid; and
- (ii)" filtering the solid to form the polymorphic form 2 of 8-chloro-6,11-dihydro-11-(4-piperidylidene)-5H-benzo[5,6]-cyclohepta[1,2-b]pyridine hemifumarate which is characterized by a DSC of  $232^{\circ}$ C  $\pm$  2°C.
- 20. (previously presented): A process for preparing polymorph form 2 of 8-chloro-6,11-dihydro-11-(4-piperidylidene)-5H-benzo[5,6]-cyclohepta[1,2-b]pyridine hemifumarate according to Claim 9 comprising:
- (a)' dissolving desloratadine in ethanol to form an ethanolic solution of desloratidine:

- (b)' dissolving fumaric acid in ethanol to form an ethanolic solution of fumaric acid;
- (c)' mixing the ethanolic solution of desloratidine and the ethanolic solution of fumaric acid at a temperature of from about 55°C to about 70°C to form a solid; and
- (d)' filtering the solid to form the polymorphic form 2 of 8-chloro-6,11-dihydro-11-(4-piperidylidene)-5H-benzo[5,6]-cyclohepta[1,2-b]pyridine hemifumarate which is characterized by a DSC of  $232^{\circ}C \pm 2^{\circ}C$ .
- 21. (previously presented): The process according to Claim 20 wherein the mixing in Step (c)' is conducted for a period of time from about 30 to about 45 minutes.

### Remarks/Arguments

By the present amendment, applicants have cancelled Claims 14 and 15. Therefore the claims remaining for consideration by the Examiner are Claims 8, 9, 11, 12, and 16-21. According to the Examiner, Claims 8, 9, 11, 12, and 16-21 are allowed.

The Examiner has rejected Claims 14 and 15 under 35 U.S.C. 103(a) as being unpatentable over Villani (4,659,716) in view of Hansen (5,658,899) and/or Strupczewski (4,954,503) and/or Congy (5,290,951).

In response, applicants have cancelled Claims 14 and 15.

It is requested that the Examiner enter the above amendment, and pass the case to issue.

Respectfully submitted,

Novartis Corporate Intellectual Property One Health Plaza, Building 104 East Hanover, NJ 07936-1080 (862) 778-7945

Date: March 28, 2005

Attorney for Applicants Reg. No. 34,940



Application No.	Applicant(s)	Applicant(s)		
10/621,670	RAY ET AL.			
Examiner	Art Unit			
Evelyn Huang	1625			

	10/621,670	RAY ET AL.	
Notice of Allowability	Examiner	Art Unit	
	Evelyn Huang	1625	
The MAILING DATE of this communication appear All claims being allowable, PROSECUTION ON THE MERITS IS (herewith (or previously mailed), a Notice of Allowance (PTOL-85) NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGOT (of the Office or upon petition by the applicant. See 37 CFR 1.313	(OR REMAINS) CLOSED in the or other appropriate communic GHTS. This application is sub	nis application. If not inclu cation will be mailed in du ject to withdrawal from iss	ided le course. <b>THIS</b> sue at the initiative
1. This communication is responsive to <u>3-28-2005</u> .		3920212	122720
2. The allowed claim(s) is/are 8,9,11,12,16,17,19 and 20.		A STORY	4
3. The drawings filed on are accepted by the Examiner.		SE RECT	2005
4. Acknowledgment is made of a claim for foreign priority und a) All b) Some* c) None of the:  1. Certified copies of the priority documents have 2. Certified copies of the priority documents have 3. Copies of the certified copies of the priority documents have International Bureau (PCT Rule 17.2(a)).  * Certified copies not received:  Applicant has THREE MONTHS FROM THE "MAILING DATE" of	been received. been received in Application Numents have been received in	No Palen	
noted below. Failure to timely comply will result in ABANDONME THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.	ENT of this application.		•
<ol> <li>A SUBSTITUTE OATH OR DECLARATION must be submit INFORMAL PATENT APPLICATION (PTO-152) which gives</li> </ol>			NOTICE OF
6. CORRECTED DRAWINGS ( as "replacement sheets") must			
(a) including changes required by the Notice of Draftsperso	on's Patent Drawing Review (F	PTO-948) attached	
1) hereto or 2) to Paper No./Mail Date			
(b) ☐ including changes required by the attached Examiner's Paper No./Mail Date	Amendment / Comment or in t	the Office action of	
Identifying Indicia such as the application number (see 37 CFR 1.8 each sheet. Replacement sheet(s) should be labeled as such in the	4(c)) should be written on the d e header according to 37 CFR 1.	rawings in the front (not th .121(d).	e back) of
<ol> <li>DEPOSIT OF and/or INFORMATION about the deposi attached Examiner's comment regarding REQUIREMENT Formula</li> </ol>			Note the
Attachment(s) 1. ☐ Notice of References Cited (PTO-892)	5. Notice of Inform	nal Patent Application (PT	'O-152)
2. Notice of Draftperson's Patent Drawing Review (PTO-948)	6. M Interview Sumn	·	· · · · · ·
<ol> <li>Information Disclosure Statements (PTO-1449 or PTO/SB/08 Paper No./Mail Date</li> </ol>	Paper No./Mai i), 7. ⊠ Examiner's Am	l Date endment/Comment	
4. Examiner's Comment Regarding Requirement for Deposit		tement of Reasons for Alle	owance
of Biological Material	9. 🗌 Other	Evelyn Huang Primary Examiner Art Unit: 1625	<i>Ť</i>

U.S Patent and Trademark Office PTOL-37 (Rev. 1-04)

**Notice of Allowability** 

Part of Paper No./Mail Date 05142005

Application/Control Number: 10/621,670

Art Unit: 1625

### **EXAMINER'S AMENDMENT**



1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Thallemer on 5-16-2005. During the interview, the examiner suggested amending claims 16-21 to be consistent with the description in the specification.

- a. Claim 16,
  - (i) replace 'mixing desloratadine, fumaric acid, and ethanol' with mixing an ethanolic solution of desloratadine and fumaric acid --.
  - (i), before 'to form a solid', insert and stirring for 30-45 minutes at this temperature--
  - (ii), after 'filtering the solid', insert at this temperature --.
- b. Claim 17,
  - (a), before 'ethanol', insert anhydrous --.
  - (b), after 'ethanol', insert anhydrous --.
  - (c), before 'to form a solid', insert and stirring for 30-45 minutes at this temperature--.
  - (d), after 'filtering the solid', insert at this temperature --.
- c. Cancel claim 18.
- d. Claim 19,
  - (i) replace 'mixing desloratadine, fumaric acid, and ethanol' with mixing an ethanolic solution of desloratadine and fumaric acid --
  - (i), before 'to form a solid', insert and stirring for 30-45 minutes after mixing--.
  - (ii), after 'filtering the solid', insert at this temperature --.

Application/Control Number: 10/621,670

Art Unit: 1625

e. Claim 20,

- (a), before 'ethanol', insert anhydrous --.
- (b), after 'ethanol', insert anhydrous --.
- (c), before 'to form a solid', insert and stirring for 30-45 minutes after mixing--.
- (d), after 'filtering the solid', insert at this temperature --.
- f. Cancel claim 21.
- g. In the specification, page 1, after the title, line 1, insert This application claims the benefit of 60/401,153, filed on 8-5-2002 --.

#### REASONS FOR ALLOWANCE

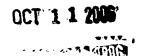
2. The following is an examiner's statement of reasons for allowance:

Claims 8, 9, 11, 12, 16, 17, 19, 20 are allowed.

The cancellation of claims 14, 15 has rendered moot the rejection under 35 U.S.C. 103(a) as being unpatentable over Villani (4659716, PTO-1449) in view of Hansen (5658899) and/or Strupczewski (4954503) and/or Congy (5290951).

Villani (4659716, PTO-1449) discloses descarbonylethoxyloratadine and the pharmaceutically acceptable salts (including the furmarate and the hydrates thereof, column 26, claim 3; column 1). Lacking is the teaching or suggestion to prepare the instant polymorph form 1 or 2 of descarbonylethoxyloratadine hemifumarate having the characteristic X-ray diffraction pattern.

WO 99/01450 (PTO-1449) or Schumacher (6506767, the US equivalent of WO 99/01450) discloses polymorphs of descarbonylethoxyloratadine. The instant is a polymorph form of descarbonylethoxy-loratadine hemifumarate having X-ray diffraction patterns different from Schumacher's polymorphs. Absent is the teaching or suggestion to prepare the instant polymorph form 1 or 2 of descarbonylethoxy-loratadine hemifumarate having the characteristic X-ray diffraction pattern.



Art Unit: 1625

Furthermore, the instant polymorphs 1 and 2 has high water solubility, and the stability study indicates that the instant polymorphs 1 and 2 are more stable than free base desloratedine under stressed condition. Both polymorphs do not change the polymorphic form even after crushing into a solid powder form (pages 3-4 of the specification).

- 3. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."
- 4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Evelyn Huang whose telephone number is 571-272-0686. The examiner can normally be reached on Tuesday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cecilia Tsang can be reached on 571-272-0562. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Evelyn Huang Primary Examiner Art Unit 1625

